

CLAIMS

What is claimed is:

1. The isolated peptide sequence GGIGDGG [SEQ ID NO. 4].
2. An angiogenic composition comprising at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4], and at least one angiogenic growth factor other than said at least one peptide.
3. The angiogenic composition of claim 2 wherein said other at least one angiogenic growth factor is chosen from the group consisting of bone-derived angiogenic proteins (BDAPs), vascular endothelial cell growth factor (VEGF), basic fibroblast growth factor (bFGF), angiogenin, endothelial growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factor-alpha (TGF- α), transforming growth factor-beta (TGF- β), and tumor necrosis factor-alpha (TNF- α).
4. An angiogenic composition comprising at least one cell migration stimulating peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3], and GGIGDGG [SEQ ID NO. 4], and at least one recombinant angiogenic growth factor.
5. A composition that is active for promoting cell migration and/or angiogenesis under cell growth promoting conditions, the composition comprising at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3], and GGIGDGG [SEQ ID NO. 4], and a matrix material.
6. The composition of claim 5 comprising a pharmacologically acceptable carrier.
7. The composition of claim 6 wherein said composition is sterile.
8. A method of promoting myocardial angiogenesis comprising administering intramyocardially to an ischemic area of the heart of an individual in need of treatment, a composition comprising:
 - at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4] in a physiologically acceptable carrier,
 - in an amount effective to enhance vascular endothelial cell migration and/or proliferation.
9. The method of claim 8 wherein said composition comprises:
 - at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4],

- at least one growth factor chosen from the group consisting of bone-derived angiogenic proteins (BMPs), vascular endothelial cell growth factor (VEGF), basic fibroblast growth factor (bFGF), angiogenin, endothelial growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factor-alpha (TGF- α), transforming growth factor-beta (TGF- β), and tumor necrosis factor-alpha (TNF- α), and a physiologically acceptable carrier.
10. The method of claim 8 wherein said physiologically acceptable carrier comprises polyvinylpyrrolidinone.
11. The method of claim 8 wherein said administering comprises delivering the composition to the ischemic area by hypodermic injection.
12. A method of promoting peripheral angiogenesis comprising administering to an ischemic area of an organ or tissue fed by a peripheral vessel of an individual in need of treatment, a composition comprising a peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4] in a physiologically acceptable carrier in an amount effective to enhance vascular endothelial cell migration and/or proliferation at said ischemic area.
13. The method of claim 12 wherein said administering comprises delivering to said area a composition comprising:
- at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4],
- at least one growth factor chosen from the group consisting of bone-derived angiogenic proteins (BDAPs), vascular endothelial cell growth factor (VEGF), fibroblast growth factor basic (bFGF), angiogenin, endothelial growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factor-alpha (TGF- α), transforming growth factor-beta (TGF- β), and tumor necrosis factor-alpha (TNF- α), and a physiologically acceptable carrier.
14. The method of claim 12 wherein said physiologically acceptable carrier comprises polyvinylpyrrolidinone.
15. The method of claim 12 wherein said administering comprises delivering the composition to the ischemic area by hypodermic injection.
16. A method of enhancing blood flow to an ischemic tissue of the body, the method comprising administering an angiogenic composition containing at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4] in a physiologically acceptable carrier to a defined area of said ischemic tissue, in an amount effective to stimulate vascular endothelial cell

migration and/or proliferation sufficient to restore or increase blood flow to said ischemic tissue.

17. The method of claim 16 wherein said administering comprises delivering said composition to a site adjacent a native blood vessel narrowed due to atherosclerotic disease.

18. The method of claim 16 wherein said administering comprises delivering said composition to a site adjacent a bypass graft.

19. The method of claim 16 wherein said administering comprises delivering an angiogenic composition containing:

at least one peptide chosen from the group consisting of IGD [SEQ ID NO. 1], IGDS [SEQ ID NO. 2], IGDQ [SEQ ID NO. 3] and GGIGDGG [SEQ ID NO. 4],

5 at least one growth factor chosen from the group consisting of bone-derived angiogenic proteins (BDAPs), vascular endothelial cell growth factor (VEGF), basic fibroblast growth factor (bFGF), angiogenin, endothelial growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factor-alpha (TGF- α), transforming growth factor-beta (TGF- β), and tumor necrosis factor-alpha (TNF- α), and
10 a physiologically acceptable carrier.